

**To:** Reidmiller, David R[ReidmillerDR@state.gov]  
**Cc:** Klemick, Heather[Klemick.Heather@epa.gov]; Sheriff, Glenn[Sheriff.Glenn@epa.gov]  
**Bcc:** alex.marten.work@gmail.com[alex.marten.work@gmail.com]  
**From:** Marten, Alex  
**Sent:** Tue 5/19/2015 3:23:20 PM  
**Subject:** RE: Talking point - IMF: FF industry gets \$10M/min in "subsidies"

Hi David,

Thanks for forwarding

I agree the term subsidy is misleading, it implicitly assigns property rights which don't exist in reality.

## Ex 5

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Alex L. Marten  
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email: marten.alex@epa.gov

**From:** Reidmiller, David R [mailto:ReidmillerDR@state.gov]  
**Sent:** Tuesday, May 19, 2015 9:37 AM  
**To:** Epner, Stephanie; Nakagawa, Melanie Y; Allen, Ashley; Johnson, Alisha; Light, Andrew E (S/SECC); Caruso, Randy J; Nogueira, Ricardo P.; Conway, Sarah R; Schuler, Reed M  
**Cc:** Akhtar, Farhan H; Gopstein, Avi M; Marten, Alex; Klemick, Heather; Sheriff, Glenn  
**Subject:** Talking point - IMF: FF industry gets \$10M/min in "subsidies"

This is a rather ambitious study from the IMF estimating a global social cost of carbon (which they term "FF subsidies" – somewhat misleadingly, in my eyes). Notably, they use the "official USG estimate of \$42/ton C". Welcome commentary from the folks far more enlightened than

me in this space.

[http://www.theguardian.com/environment/2015/may/18/fossil-fuel-companies-getting-10m-a-minute-in-subsidies-says-imf?CMP=share\\_btn\\_fb](http://www.theguardian.com/environment/2015/may/18/fossil-fuel-companies-getting-10m-a-minute-in-subsidies-says-imf?CMP=share_btn_fb)

## Fossil fuels subsidised by \$10m a minute, says IMF

‘Shocking’ revelation finds \$5.3tn subsidy estimate for 2015 is greater than the total health spending of all the world’s governments

Fossil fuel companies are benefitting from global subsidies of \$5.3tn a year, equivalent to \$10m a minute every day, according to a startling new estimate by the International Monetary Fund.

The IMF calls the revelation “shocking” and says the figure is an “extremely robust” estimate of the true cost of fossil fuels. The \$5.3tn subsidy estimated for 2015 is greater than the total health spending of all the world’s governments.

The vast sum is largely due to polluters not paying the costs imposed on governments by the burning of coal, oil and gas. These include the harm caused to local populations by air pollution as well as to people across the globe affected by the floods, droughts and storms being driven by climate change.

Nicholas Stern, an eminent climate economist at the London School of Economics, said: “This very important analysis shatters the myth that fossil fuels are cheap by showing just how huge their real costs are. There is no justification for these enormous subsidies for fossil fuels, which distort markets and damages economies, particularly in poorer countries.”

Lord Stern said that even the IMF’s vast subsidy figure was a significant underestimate: “A more complete estimate of the costs due to climate change would show the implicit subsidies for fossil fuels are much bigger even than this report suggests.”

The IMF, one of the world’s most respected financial institutions, said that ending

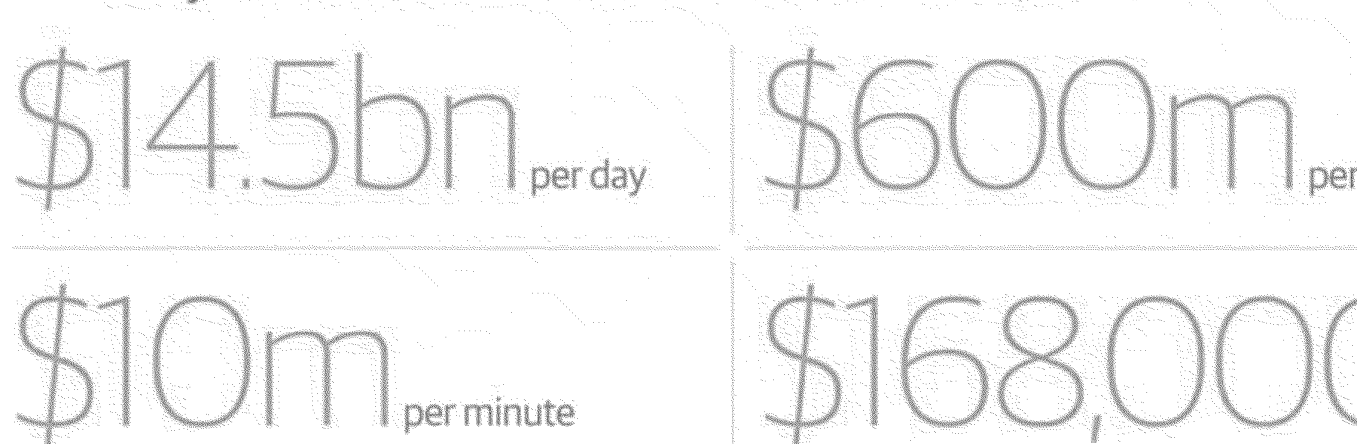
subsidies for fossil fuels would cut global carbon emissions by 20%. That would be a giant step towards taming global warming, an issue on which the world has made little progress to date.

Ending the subsidies would also slash the number of premature deaths from outdoor air pollution by 50% – about 1.6 million lives a year.

Furthermore, the IMF said the resources freed by ending fossil fuel subsidies could be an economic “game-changer” for many countries, by driving economic growth and poverty reduction through greater investment in infrastructure, health and education and also by cutting taxes that restrict growth.

## Fossil fuel subsidies in numbers

The IMF says the cost of fossil fuel subsidies in 2015 will be US\$5.3tn or ...



Another consequence would be that the need for subsidies for renewable energy – a relatively tiny \$120bn a year – would also disappear, if fossil fuel prices reflected the full cost of their impacts.

“These [fossil fuel subsidy] estimates are shocking,” said Vitor Gaspar, the IMF’s head of fiscal affairs and former finance minister of Portugal. “Energy prices remain woefully below levels that reflect their true costs.”

David Coady, the IMF official in charge of the report, said: “When the [\$5.3tn] number came out at first, we thought we had better double check this!” But the broad picture of huge global subsidies was “extremely robust”, he said. “It is the true cost associated with fossil fuel subsidies.”

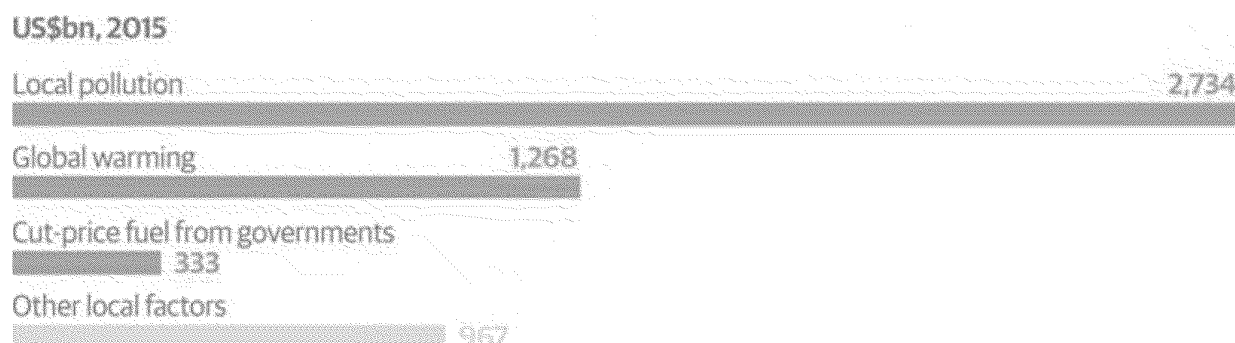
The IMF estimate of \$5.3tn in fossil fuel subsidies represents 6.5% of global

GDP. Just over half the figure is the money governments are forced to spend treating the victims of air pollution and the income lost because of ill health and premature deaths. The figure is higher than a 2013 IMF estimate because new data from the World Health Organisation shows the harm caused by air pollution to be much higher than thought.

Coal is the dirtiest fuel in terms of both local air pollution and climate-warming carbon emissions and is therefore the greatest beneficiary of the subsidies, with just over half the total. Oil, heavily used in transport, gets about a third of the subsidy and gas the rest.

The biggest single source of air pollution is coal-fired power stations and China, with its large population and heavy reliance on coal power, provides \$2.3tn of the annual subsidies. The next biggest fossil fuel subsidies are in the US (\$700bn), Russia (\$335bn), India (\$277bn) and Japan (\$157bn), with the European Union collectively allowing \$330bn in subsidies to fossil fuels.

## Fossil fuel subsidies – how the costs break down



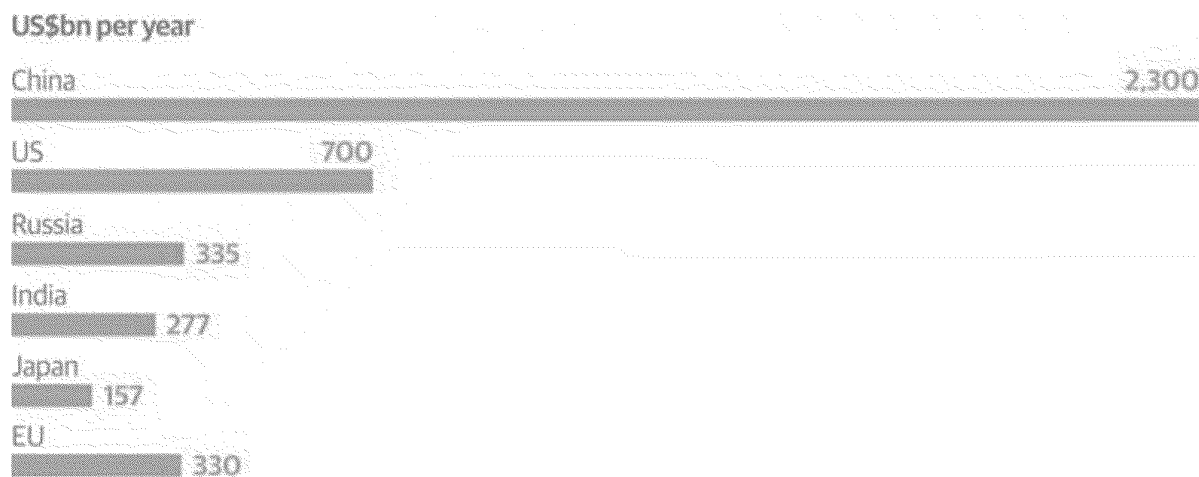
The costs resulting from the climate change driven by fossil fuel emissions account for subsidies of \$1.27tn a year, about a quarter, of the IMF's total. The IMF calculated this cost using an official US government estimate of \$42 a tonne of CO<sub>2</sub> (in 2015 dollars), a price "very likely to underestimate" the true cost, according to the UN's Intergovernmental Panel on Climate Change.

The direct subsidising of fuel for consumers, by government discounts on diesel and other fuels, account for just 6% of the IMF's total. Other local factors, such as reduced sales taxes on fossil fuels and the cost of traffic congestion and accidents, make up the rest. The IMF says traffic costs are included because increased fuel prices would be the most direct way to reduce them.

Christiana Figueres, the UN's climate change chief charged with delivering a

deal to tackle global warming at a crunch summit in December, said: “The IMF provides five trillion reasons for acting on fossil fuel subsidies. Protecting the poor and the vulnerable is crucial to the phasing down of these subsidies, but the multiple economic, social and environmental benefits are long and legion.”

## Top fossil fuel subsidies by country



Barack Obama and the G20 nations called for an end to fossil fuel subsidies in 2009, but little progress had been made until oil prices fell in 2014. In April, the president of the World Bank, Jim Yong Kim, told the Guardian that it was crazy that governments were still driving the use of coal, oil and gas by providing subsidies. “We need to get rid of fossil fuel subsidies now,” he said.

Reform of the subsidies would increase energy costs but Kim and the IMF both noted that existing fossil fuel subsidies overwhelmingly go to the rich, with the wealthiest 20% of people getting six times as much as the poorest 20% in low and middle-income countries. Gaspar said that with oil and coal prices currently low, there was a “golden opportunity” to phase out subsidies and use the increased tax revenues to reduce poverty through investment and to provide better targeted support.

Subsidy reforms are beginning in dozens of countries including Egypt, Indonesia, Mexico, Morocco and Thailand. In India, subsidies for diesel ended in October 2014. “People said it would not be possible to do that,” noted Coady. Coal use has also begun to fall in China for the first time this century.

On renewable energy, Coady said: “If we get the pricing of fossil fuels right, the argument for subsidies for renewable energy will disappear. Renewable energy would all of a sudden become a much more attractive option.”

Shelagh Whitley, a subsidies expert at the Overseas Development Institute, said: “The IMF report is yet another reminder that governments around the world are propping up a century-old energy model. Compounding the issue, our research shows that many of the energy subsidies highlighted by the IMF go toward finding new reserves of oil, gas and coal, which we know must be left in the ground if we are to avoid catastrophic, irreversible climate change.”

Developing the international cooperation needed to tackle climate change has proved challenging but a key message from the IMF's work, according to Gaspar, is that each nation will directly benefit from tackling its own fossil fuel subsidies. “The icing on the cake is that the benefits from subsidy reform – for example, from reduced pollution – would overwhelmingly accrue to local populations,” he said.

“By acting local, and in their own best interest, [nations] can contribute significantly to the solution of a global challenge,” said Gaspar. “The path forward is clear: act local, solve global.”

**David Reidmiller, PhD**

*Chief Climate Scientist*

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[reidmillerdr@state.gov](mailto:reidmillerdr@state.gov)

<http://www.state.gov/e/oes/climate/index.htm>

This email is UNCLASSIFIED.

**To:** Rowell, Arden[karowell@illinois.edu]  
**Bcc:** alex.marten.work@gmail.com[alex.marten.work@gmail.com]  
**From:** Marten, Alex  
**Sent:** Mon 4/13/2015 10:11:58 PM  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Thanks, that looks really interesting, went ahead and ordered a copy.

--

Alex L. Marten  
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**From:** Rowell, Arden [mailto:karowell@illinois.edu]  
**Sent:** Monday, April 13, 2015 6:02 PM  
**To:** Marten, Alex  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Great, glad it was helpful. If you decide you want to invest in a book, I think [http://www.amazon.com/A-Guide-Federal-Agency-Rulemaking/dp/1614385793/ref=dp\\_ob\\_title\\_bk](http://www.amazon.com/A-Guide-Federal-Agency-Rulemaking/dp/1614385793/ref=dp_ob_title_bk) is relatively readable.

Arden Rowell

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[http://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=1610155](http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155)

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**From:** Marten, Alex [Marten.Alex@epa.gov]  
**Sent:** Monday, April 13, 2015 4:58 PM  
**To:** Rowell, Arden  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

This is perfect, thank you so much. I am trying to get a better handle on how these things are argued and what the courts are looking at/for. This is a perfect starting place.



--

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**From:** Rowell, Arden [<mailto:karowell@illinois.edu>]  
**Sent:** Monday, April 13, 2015 5:41 PM  
**To:** Marten, Alex  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex,

Sure thing. Two good cases come to mind, one super-famous (and even an EPA rule), the other a recent one that's been causing a lot of conversation.

Most famous case rejecting an agency BCA under the APA is probably *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991) (rejecting EPA's rule banning asbestos under TSCA section 6 & remanding to the agency on the rounds that the cost-benefit justification was inadequate) (available at <https://law.resource.org/pub/us/case/reporter/F2/947/947.F2d.1201.89-4596.html>). EPA did a couple of things I'd be surprised to see nowadays (discounted costs but not benefits & had some weird inconsistencies in VSLs), and a few things that could totally happen again (left some benefits unquantified, refused to repeat their analysis with better data supplied by industry). The most relevant section is probably the part discussing "Unreasonable Risk of Injury." One (possibly) important point on this case, though, is that it's not actually under the typical (and easier-to-satisfy) "arbitrary and capricious" review--the court applied a more stringent standard of review because of how they read the underlying statute, and that's the standard that the rule failed. (This may be irrelevant to your current purposes, if all you need is a case that rejects a BCA under the APA, but thought I'd mention it.) A lot of legal commentators think this case went very deep into taking a "hard look" at the agency's rationale...judicial review doesn't generally get deeper than this.

Another much-talked-about more recent case where the rule was rejected on the basis of arbitrary and capricious review (under the APA) is *Business Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011) (vacating as arbitrary and capricious an SEC rule requiring public companies to include information about board nominees in their annual proxy statements, saying that the agency "failed . . . adequately to assess the economic effects of a new rule"), available at <http://www.leagle.com/decision/ln%20FCO%2020110722000T.xml>. Part II is the most relevant section. Basically, the court said that the agency had "inconsistently and opportunistically framed the costs and benefits of the rule; failed adequately to quantify the certain costs or to explain why those costs could not

be quantified; neglected to support its predictive judgments; contradicted itself; and failed to respond to substantial problems raised by commenters" (opinion at 1148-49). It's not 100% clear how many of those things had to happen for the rule to be arbitrary and capricious, but all of them together was obviously bad.

Let me know if those work or if you need something newer/different. Or if I ended up not making sense somewhere...typing in a hurry before I run off to a meeting.

Arden Rowell

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**From:** Marten, Alex [Marten.Alex@epa.gov]

**Sent:** Monday, April 13, 2015 3:38 PM

**To:** Rowell, Arden

**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Arden,

My turn for question. Do you have any good examples of rules that have been vacated or remanded due to APA issues w/ the BCA? Specifically, ones that weren't associated with the SCC.

Thanks.

--

Alex L. Marten

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email: [marten.alex@epa.gov](mailto:marten.alex@epa.gov)

**From:** Rowell, Arden [<mailto:karowell@illinois.edu>]  
**Sent:** Monday, April 06, 2015 12:49 PM  
**To:** Marten, Alex  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Neat! I'll go look. Thanks Alex!

Arden Rowell

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**From:** Marten, Alex [[Marten.Alex@epa.gov](mailto:Marten.Alex@epa.gov)]  
**Sent:** Monday, April 06, 2015 11:26 AM  
**To:** Rowell, Arden  
**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

That's an interesting idea. It reminded me that the EU through the PESETA project has done some work w/ tourism, but I'm not sure if they have addressed this issue in there.

<http://peseta.jrc.ec.europa.eu/>

--

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**From:** Rowell, Arden [<mailto:karowell@illinois.edu>]  
**Sent:** Monday, April 06, 2015 12:22 PM  
**To:** Marten, Alex

**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

Awesome--thanks so much. Particularly interesting re: the "everything else" box in the most recent DICE version. Seems like may be more opportunities to incorporate some sort of "special cultural value" measure as the models get better at determining localized & regional impact. Could look at tourist dollars spent or something. Apparently Mastercard creates a list every year of "most visited cities" [http://newsroom.mastercard.com/wp-content/uploads/2014/07/Mastercard\\_GDCI\\_2014\\_Letter\\_Final\\_70814.pdf](http://newsroom.mastercard.com/wp-content/uploads/2014/07/Mastercard_GDCI_2014_Letter_Final_70814.pdf) (Bangkok pretty much ties London--who would have thought?). Anyway, thanks again--super helpful!

PS What about Venice! Venice!!

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**From:** Marten, Alex [[Marten.Alex@epa.gov](mailto:Marten.Alex@epa.gov)]

**Sent:** Monday, April 06, 2015 11:05 AM

**To:** Rowell, Arden

**Subject:** RE: hi! and quick question on community/cultural artifact valuation in the SCC

I think in general that is a safe assumption. But I will note that in earlier version of the DICE model Nordhaus had a human settlements category which he acknowledged was speculative, but this is the type of thing he was trying to capture. In the most recent version of DICE he has a catch all category which he might argue is trying to capture an adjustment for hard to measure things such as this. FUND does not account for this, and I don't recall any of the PAGE literature talking about this issue.

I hope that helps.

P.S. Your example made me smile because the Italians are really big on this

point in general (not just wrt the IAMs) and bring it up all the time at international events.

--

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**From:** Rowell, Arden [<mailto:karowell@illinois.edu>]  
**Sent:** Monday, April 06, 2015 11:57 AM  
**To:** Marten, Alex  
**Subject:** hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex! Hope all's well. Quick question: can you think of any examples within FUND, DICE, or PAGE of valuation of communities, groups, or cultural artifacts rather than individualized damage? So, e.g., suppose that someone thought that the culture of the Lapplanders was important separate from individualized harm to individual Lapplanders, or that Venice was important for cultural reasons that go beyond harm to Venetians. Anything in any of the IAMs on that? I was thinking there wasn't anything on any of that stuff in any of the models (and I guess there could be double-counting concerns if there were), but figured you'd be the person to know.

All best,

Arden Rowell

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**To:** Ferris, Ann[ferris.ann@epa.gov]; Gilbreath, Jan[Gilbreath.Jan@epa.gov]  
**Bcc:** alex.marten.work@gmail.com[alex.marten.work@gmail.com]  
**From:** Marten, Alex  
**Sent:** Wed 4/8/2015 9:53:59 PM  
**Subject:** FW: O&G RIA Comments  
2015 04 07 oil natural gas proposal nsps 2 draft ria - alm.docx

Attached are some preliminary comments I sent to Alex Mac on the O&G RIA. We have a call scheduled for Friday to discuss OP concerns regarding the RIA.

There is an RIA workgroup call tomorrow and depending on how that

# Non-Responsive

Ex 5

Non-Responsive

Over the last couple of years we have established a good working relationship with these folks so I am hoping the call will be non-confrontational and that we are able to reach an agreement that all parties can feel comfortable bringing to their management if necessary.

--

Alex L. Marten  
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email: marten.alex@epa.gov

**From:** Marten, Alex  
**Sent:** Wednesday, April 08, 2015 5:44 PM  
**To:** Macpherson, Alex  
**Subject:** O&G RIA Comments

Hi Alex,

Attached please find comments on the RIA. I have read everything except Chapter 2 and have included some comments in Chapters 3, 4, and 7. Please feel free to distribute them to the appropriate parties before our call on Friday.

I will also forward this to Ann to see if she has any comments on 7.

Please let me know if you have any questions.

--

Alex L. Marten  
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**To:** McGartland, Al[McGartland.Al@epa.gov]  
**Bcc:** alex.marten.work@gmail.com[alex.marten.work@gmail.com]  
**From:** Marten, Alex  
**Sent:** Tue 4/7/2015 8:49:06 PM  
**Subject:** CO2-CH4 Question

Hi Al,

An interesting question has come up in the context of

**Ex 5**

**Ex 5**

**Ex 5**

**Ex 5**

**Ex 5**

Maybe we could briefly discuss this tomorrow. I would be really interested in your opinion before going into Thursday's discussion w/ OAR on the issue.

Thanks.

--

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**To:** Macpherson, Alex[Macpherson.Alex@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov];  
Shouse, Kate[Shouse.Kate@epa.gov]  
**Cc:** Alsalam, Jameel[Alsalam.Jameel@epa.gov]  
**Bcc:** alex.marten.work@gmail.com[alex.marten.work@gmail.com]  
**From:** Marten, Alex  
**Sent:** Tue 4/7/2015 5:03:35 PM  
**Subject:** RE: Flaring CO2 disbenefits and SC-CH4

**Ex 5**

**Ex 5**

**Ex 5**

**Ex 5**

# Ex 5

Does this make sense?? Somebody should check my math.

--

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**From:** Macpherson, Alex  
**Sent:** Tuesday, April 07, 2015 12:12 PM  
**To:** Sarofim, Marcus; Marten, Alex; Shouse, Kate  
**Cc:** Alsalam, Jameel  
**Subject:** RE: Flaring CO2 disbenefits and SC-CH4

Marcus, Alex

I hate to put the pressure on but some feedback on this would be extremely valuable by today or tomorrow, if possible.

Sorry and thanks,  
Alex

**From:** Sarofim, Marcus  
**Sent:** Tuesday, April 07, 2015 11:21 AM  
**To:** Marten, Alex; Shouse, Kate  
**Cc:** Alsalam, Jameel; Macpherson, Alex

**Subject:** Flaring CO2 disbenefits and SC-CH4

Hi Alex Marten,

**Ex 5**

My thinking:

**Ex 5**

**Ex 5**

We can maybe chat about this on the Thursday call?

-Marcus

Marcus C. Sarofim, PhD  
phone: 202-343-9993  
WJC East 4410M  
Environmental Scientist  
Climate Science & Impacts Branch

**To:** Macpherson, Alex[Macpherson.Alex@epa.gov]  
**From:** Marten, Alex  
**Sent:** Wed 4/1/2015 10:21:03 PM  
**Subject:** Fw: HD CH4 text?  
preamble sc GHG excerpt (03 13 15).docx

--

Alex Marten  
marten.alex@epa.gov

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**From:** Shouse, Kate  
**Sent:** Wednesday, April 1, 2015 11:54:49 AM  
**To:** Marten, Alex  
**Subject:** Re: HD CH4 text?

Hi, Alex. I've attached an excerpt from the preamble - see pg 4 for the non-CO2 discussion. Do you want the RIA as well? RIA is the same in terms of discussing

**Ex 5**

Thanks,  
Kate

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**From:** Marten, Alex  
**Sent:** Wednesday, April 1, 2015 11:22 AM  
**To:** Shouse, Kate  
**Subject:** HD CH4 text?

Hi Kate,

Could you please send me a copy of the CH4 benefits text from the HD package?

**Ex 5**

, etc.

Thanks.

--

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